Lucas, Z
09/549642

STIC Search

FILE 'REGISTRY' ENTERED AT 15:04:32 ON 15 MAY 2003
E HYDROLASE/CN 5
L1 473 S HYDROLASE ?/CN

FILE 'HCAPLUS' ENTERED AT 15:05:47 ON 15 MAY 2003
L2 2250 S (L1 OR HYDROLASE OR ENZYME) AND PLAQUE
L3 8 S L2 AND (KRILL OR CRUSTACEA?)

L3 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:835783 HCAPLUS
DOCUMENT NUMBER: 137:41678
TITLE: Proteolytic degradation of oral biofilms in vitro and in vivo: Potential of proteases originating from Euphausia superba for **plaque** control
AUTHOR(S): Berg, I. Cecilia Hahn; Kalfas, Sotirios; Malmsten, Martin; Arnebrant, Thomas
CORPORATE SOURCE: Institute for Surface Chemistry, YKI, Stockholm, SE-114 86, Swed.
SOURCE: European Journal of Oral Sciences (2001), 109(5), 316-324
CODEN: EJOSFY; ISSN: 0909-8836
PUBLISHER: Munksgaard International Publishers Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This paper deals with enzymic removal of dental **plaque**, in vitro as well as in vivo, using proteases from the Antarctic **krill** shrimp (Euphausia superba), referred to as Krillase[R]. Krillase exhibits both endo- and exopeptidase activity but has no microbicidal effect. In model systems with pure cultures of oral microorganisms, Krillase demonstrated inhibition of microbial adhesion to saliva-coated hydroxyapatite. Furthermore, a protocol for the growth of reproducible in vitro **plaque** films has been developed, and effects of Krillase on the **plaque** film were investigated by means of SEM. The results showed that Krillase efficiently released microorganisms from **plaque** in vitro, the effect being dependent on the enzymic activity. The surface energy of the substratum had a minor influence on the formation and removal of **plaque** in vitro. Ellipsometric studies on the formation and enzymic removal of a salivary pellicle indicated that the enzymic effect on **plaque** may partly depend on degrdn. of the salivary pellicle. Krillase was also able to remove **plaque** accumulated on dentures in vivo. Our results demonstrate the potential of Krillase for **plaque** control, and that these **enzymes** are worthy of further investigations including clin. studies and work to find a suitable vehicle.
REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2000:141480 HCAPLUS
DOCUMENT NUMBER: 132:189685
TITLE: **Krill**-derived multifunctional **enzyme** and its medical uses
INVENTOR(S): De Faire, Johan R.; Franklin, Richard L.; Kay, John; Lindblom, Ragnvald

PATENT ASSIGNEE(S): Phairson Medical Inc., UK
SOURCE: U.S., 41 pp., Cont.-in-part of U.S. Ser. No. 385,450.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6030612	A	20000229	US 1995-486820	19950607
US 5945102	A	19990831	US 1995-385540	19950208
CA 2212533	AA	19960815	CA 1996-2212533	19960208
WO 9624371	A1	19960815	WO 1996-US1650	19960208
W: AL, AM, AU, BB, BG, BR, CA, CN, CZ, EE, FI, GE, HU, IS, JP, KG, KP, KR, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, AZ, BY, KG, KZ, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9649170	A1	19960827	AU 1996-49170	19960208
AU 718220	B2	20000413		
EP 810875	A1	19971210	EP 1996-905398	19960208
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV				
BR 9607506	A	19971223	BR 1996-7506	19960208
CN 1181018	A	19980506	CN 1996-193103	19960208
CN 1090505	B	20020911		
JP 11502102	T2	19990223	JP 1996-524401	19960208
US 5958406	A	19990928	US 1996-600273	19960208
NZ 302984	A	20010126	NZ 1996-302984	19960208
NZ 503162	A	20011130	NZ 1996-503162	19960208
NO 9703627	A	19971007	NO 1997-3627	19970806
US 6232088	B1	20010515	US 1998-220731	19981224

PRIORITY APPLN. INFO.:

US 1994-338501	B2	19941122
US 1995-385540	A2	19950208
US 1995-486820	A	19950607
NZ 1996-302984	A1	19960208
US 1996-600273	A2	19960208
WO 1996-US1650	W	19960208

AB The invention relates to a multifunctional **enzyme** that can be derived from **crustaceans** or fish. The **enzyme** has at least one of a chymotrypsin, trypsin, elastase, collagenase and exo peptidase activity, and a mol. wt. between about 20 kDa and about 40 kDa as detd. by SDS-PAGE. Preferably, the multifunctional **enzyme** has substantial anti cell-cell adhesion activity. Preferably, the multifunctional **enzyme** has substantial homol. with the **krill** multifunctional **enzyme**. These **enzymes** are useful for treating viral infections such as herpes outbreaks, fungal, bacterial or parasitic infections, including the primary and secondary infections of leprosy, colitis, ulcers, hemorrhoids, corneal scarring, dental **plaque**, acne, cystic fibrosis, blood clots, wounds, immune disorders including autoimmune disease and cancer. Addnl., the invention relates to a method of purifying the multifunctional **enzyme** , and to a prepn. of essentially purified multifunctional

enzyme.
REFERENCE COUNT: 80 THERE ARE 80 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:622175 HCAPLUS
DOCUMENT NUMBER: 131:237988
TITLE: Acne treatment with **krill**-derived multifunctional **enzyme**
INVENTOR(S): De Faire, Johan R.; Franklin, Richard L.; Kay, John; Lindblom, Ragnvald
PATENT ASSIGNEE(S): Phairson Medical Inc., UK
SOURCE: U.S., 42 pp., Cont.-in-part of U.S. Ser. No. 486,820.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5958406	A	19990928	US 1996-600273	19960208
US 5945102	A	19990831	US 1995-385540	19950208
US 6030612	A	20000229	US 1995-486820	19950607
US 6232088	B1	20010515	US 1998-220731	19981224

PRIORITY APPLN. INFO.: US 1994-338501 B2 19941122
US 1995-385540 A2 19950208
US 1995-486820 A2 19950607
US 1996-600273 A2 19960208

AB The invention relates to a multifunctional **enzyme** that can be derived from **crustaceans** or fish. The **enzyme** has at least one of a chymotrypsin, trypsin, elastase, collagenase and exo peptidase activity, and a mol. wt. between about 20 kd and about 40 kd as detd. by SDS PAGE. Preferably, the multifunctional **enzyme** has substantial anti cell-cell adhesion activity. Preferably, the multifunctional **enzyme** has substantial homol. with the **krill** multifunctional **enzyme**. These **enzymes** are useful for treating viral infections such as herpes outbreaks, fungal, bacterial or parasitic infections, including the primary and secondary infections of leprosy, colitis, ulcers, hemorrhoids, corneal scarring, dental **plaque**, acne, cystic fibrosis, blood clots, wounds, immune disorders including autoimmune disease and cancer. Addnl., the invention relates to a method of purifying the multifunctional **enzyme** , and to a prepn. of essentially purified multifunctional **enzyme**. Women with facial acne were treated with 0.1 mg of **krill** multifunctional **hydrolase** prepn. several times a day for 4-6 days.
REFERENCE COUNT: 79 THERE ARE 79 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:561521 HCAPLUS
DOCUMENT NUMBER: 131:165291
TITLE: Multifunctional **enzyme** from

krill and its medicinal use

INVENTOR(S): De Faire, Johan R.; Franklin, Richard L.; Kay, John; Lindblom, Ragnvald
PATENT ASSIGNEE(S): Phairson Medical Inc., UK
SOURCE: U.S., 30 pp., Cont.-in-part of U.S. Ser. No. 338,501, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5945102	A	19990831	US 1995-385540	19950208
US 6030612	A	20000229	US 1995-486820	19950607
CA 2212533	AA	19960815	CA 1996-2212533	19960208
WO 9624371	A1	19960815	WO 1996-US1650	19960208
W: AL, AM, AU, BB, BG, BR, CA, CN, CZ, EE, FI, GE, HU, IS, JP, KG, KP, KR, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, AZ, BY, KG, KZ, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9649170	A1	19960827	AU 1996-49170	19960208
AU 718220	B2	20000413		
ZA 9601030	A	19960829	ZA 1996-1030	19960208
EP 810875	A1	19971210	EP 1996-905398	19960208
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV				
BR 9607506	A	19971223	BR 1996-7506	19960208
CN 1181018	A	19980506	CN 1996-193103	19960208
CN 1090505	B	20020911		
JP 11502102	T2	19990223	JP 1996-524401	19960208
US 5958406	A	19990928	US 1996-600273	19960208
NZ 302984	A	20010126	NZ 1996-302984	19960208
NZ 503162	A	20011130	NZ 1996-503162	19960208
NO 9703627	A	19971007	NO 1997-3627	19970806
US 6232088	B1	20010515	US 1998-220731	19981224

PRIORITY APPLN. INFO.:
US 1994-338501 B2 19941122
US 1995-385540 A2 19950208
US 1995-486820 A 19950607
NZ 1996-302984 A1 19960208
US 1996-600273 A2 19960208
WO 1996-US1650 W 19960208

AB The invention relates to a multifunctional **enzyme** that can be derived from **crustaceans** or fish. The **enzyme** has at least one of a chymotrypsin, trypsin, elastase, collagenase and exopeptidase activity, and a mol. wt. between about 20 kDa and about 40 kDa as detd. by SDS-PAGE. Preferably, the multifunctional **enzyme** has substantial anti cell-cell adhesion activity. Preferably, the multifunctional **enzyme** has substantial homol. with the **krill** multifunctional **enzyme**. These **enzymes** are useful for treating viral infections such as herpes outbreaks, fungal, bacterial or parasitic infections, including the primary and secondary infections of leprosy, colitis, ulcers, hemorrhoids, corneal scarring, dental **plaque**,

acne, cystic fibrosis, blood clots, wounds, immune disorders including autoimmune disease and cancer. Addnl., the invention relates to a method of purifying the multifunctional **enzyme**, and to a prepn. of essentially purified multifunctional **enzyme**.

REFERENCE COUNT: 80 THERE ARE 80 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:448008 HCAPLUS
DOCUMENT NUMBER: 131:268886
TITLE: Molecular cloning and characterization of prophenoloxidase in the black tiger shrimp, Penaeus monodon
AUTHOR(S): Sritunyalucksana, Kallaya; Cerenius, Lage; Soderhall, Kenneth
CORPORATE SOURCE: Department of Physiological Mycology, Evolutionary Biology Centre, University of Uppsala, Uppsala, S-75236, Swed.
SOURCE: Developmental & Comparative Immunology (1999), 23(3), 179-186
CODEN: DCIMDQ; ISSN: 0145-305X
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A cDNA encoding shrimp, Penaeus monodon, prophenoloxidase (proPO) was obtained by screening a hemocyte library by **plaque** hybridization using a proPO cDNA fragment from freshwater crayfish, Pacifastacus leniusculus, as a probe. The 3,002 bp cDNA contains an open reading frame of 2,121 bp and a 881 bp 3'-untranslated region. The mol. mass of the deduced amino acid sequence (688 amino acids) is 78,700 Da with an estd. pI of 5.8. Two putative copper binding sites are present and they have a highly conserved sequence around these sites. No signal peptide was detected in the shrimp proPO, as has been previously shown to be the case for all arthropod proPOs cloned so far. The cleavage site of zymogen activation is likely to be between Arg 44 and Val 45. A tentative complement-like motif (GCGWPQHM) is also present. Shrimp proPO mRNA is synthesized in the hemocytes and not in the hepatopancreas. Comparison of amino acid sequences showed that shrimp proPO is more closely related to another **crustacean** proPO, namely crayfish, than to the insect proPOs.
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1996:623121 HCAPLUS
DOCUMENT NUMBER: 125:265989
TITLE: Multifunctional **enzyme** from **krill** and its medicinal use
INVENTOR(S): De Faire, Johan; Franklin, Richard L.; Kay, John
PATENT ASSIGNEE(S): Phairson Medical, Inc., Swed.
SOURCE: PCT Int. Appl., 128 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9624371	A1	19960815	WO 1996-US1650	19960208
W: AL, AM, AU, BB, BG, BR, CA, CN, CZ, EE, FI, GE, HU, IS, JP, KG, KP, KR, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, AZ, BY, KG, KZ, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5945102	A	19990831	US 1995-385540	19950208
US 6030612	A	20000229	US 1995-486820	19950607
AU 9649170	A1	19960827	AU 1996-49170	19960208
AU 718220	B2	20000413		
EP 810875	A1	19971210	EP 1996-905398	19960208
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV				
BR 9607506	A	19971223	BR 1996-7506	19960208
JP 11502102	T2	19990223	JP 1996-524401	19960208
NZ 302984	A	20010126	NZ 1996-302984	19960208
NO 9703627	A	19971007	NO 1997-3627	19970806

PRIORITY APPLN. INFO.:		
US 1995-385540	A	19950208
US 1995-486820	A	19950607
US 1994-338501	B2	19941122
WO 1996-US1650	W	19960208

AB The invention relates to a multifunctional **enzyme** that can be derived from **crustaceans** or fish. The **enzyme** has at least one of a chymotrypsin, trypsin, elastase, collagenase and exopeptidase activity, and a mol. wt. between about 20 kDa and about 40 kDa as detd. by SDS-PAGE. Preferably, the multifunctional **enzyme** has substantial anti cell-cell adhesion activity. Preferably, the multifunctional **enzyme** has substantial homol. with the **krill** multifunctional **enzyme**. These **enzymes** are useful for treating viral infections such as herpes outbreaks, fungal, bacterial or parasitic infections, including the primary and secondary infections of leprosy, colitis, ulcers, hemorrhoids, corneal scarring, dental **plaque**, acne, cystic fibrosis, blood clots, wounds, immune disorders including autoimmune disease and cancer. Addnl., the invention relates to a method of purifying the multifunctional **enzyme** , and to a prepn. of essentially purified multifunctional **enzyme**.

L3 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1996:95137 HCAPLUS
DOCUMENT NUMBER: 124:126932
TITLE: Composition for dental use comprising **krill enzymes**
INVENTOR(S): Hellgren, Kristian; Hellgren, Lars; Mohr, Viggo; Vincent, Jan
PATENT ASSIGNEE(S): Swed.
SOURCE: PCT Int. Appl., 15 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9533470	A1	19951214	WO 1994-SE549	19940607
W: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KG, KP, KR, KZ, LK, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, TJ, TT, UA, US, UZ, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2192332	AA	19951214	CA 1994-2192332	19940607
AU 9472779	A1	19960104	AU 1994-72779	19940607
AU 700252	B2	19981224		
EP 759764	A1	19970305	EP 1994-923112	19940607
R: DE, FR, GB, IT, SE				

PRIORITY APPLN. INFO.: WO 1994-SE549 19940607

AB **Krill enzymes** are used for the manuf. of a prophylactic compn. for preventing dental **plaque** formation, in particular for decreasing the adhesive ability of **plaque** bacteria. **Krill enzymes** were extd. from Euphausia superba and the antiplaque effects were both in vivo and in vitro demonstrated.

L3 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1994:95821 HCAPLUS
DOCUMENT NUMBER: 120:95821
TITLE: Pharmaceutical uses of **krill enzymes**
INVENTOR(S): Lindblom, Ragnvald; De, Faire Johan
PATENT ASSIGNEE(S): Phairson Medical AB, Swed.
SOURCE: PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9324142	A1	19931209	WO 1993-SE455	19930521
W: AT, AU, BB, BG, BR, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9341000	A1	19931230	AU 1993-41000	19930521
AU 675942	B2	19970227		
EP 642351	A1	19950315	EP 1993-910549	19930521
EP 642351	B1	20020320		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
HU 69989	A2	19950928	HU 1994-3343	19930521
JP 08501068	T2	19960206	JP 1993-500454	19930521
EP 824910	A2	19980225	EP 1997-202849	19930521
EP 824910	A3	19980304		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				

EP 838213	A1	19980429	EP 1997-202796	19930521
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
JP 2000351734	A2	20001219	JP 2000-147259	19930521
AT 214610	E	20020415	AT 1993-910549	19930521
ES 2173887	T3	20021101	ES 1993-910549	19930521
CN 1089505	A	19940720	CN 1993-108207	19930522
CN 1090507	B	20020911		
ZA 9303598	A	19931213	ZA 1993-3598	19930524
NO 9404448	A	19950123	NO 1994-4448	19941121

PRIORITY APPLN. INFO.:

SE 1992-1628	A	19920522
EP 1993-910549	A3	19930521
JP 1994-500454	A3	19930521
WO 1993-SE455	A	19930521

AB Non-immunogenic **enzyme** compns. which have been isolated from antarctic **krill** and exhibit both endo- and exo-peptidase activity, are useful for the manuf. of medicaments and pharmaceutical compns. for the treatment of a great variety of diseases in humans and animals (infections, inflammations, cancers, HIV/AIDS, pain, polyps, warts, hemorrhoids, **plaque**, wrinkles, thin hair, allergic itch, eye diseases, etc.). Isolation and characterization of the **enzyme** compn. from **krill** are described.

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO' ENTERED AT 15:07:59 ON 15 MAY 2003)

L4 15 S L3

L5 11 DUP REM L4 (4 DUPLICATES REMOVED)

L5 ANSWER 1 OF 11 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2003:161895 BIOSIS

DOCUMENT NUMBER: PREV200300161895

TITLE: **Enzyme** and DNA sequence encoding **krill**-derived multifunctional protein.

AUTHOR(S): Kay, John (1); Kille, Peter

CORPORATE SOURCE: (1) Cardiff, UK UK
ASSIGNEE: Phairson Medical, Inc., London, UK

PATENT INFORMATION: US 6524814 February 25, 2003

SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Feb. 25 2003) Vol. 1267, No. 4, pp. No Pagination.
http://www.uspto.gov/web/menu/patdata.html. e-file.
ISSN: 0098-1133.

DOCUMENT TYPE: Patent

LANGUAGE: English

AB The present invention provides nucleic acid and corresponding amino acid sequences of a multifunctional protein that has been found to be useful in numerous medical and cosmetic contexts. A protein having "multifunctional activity," is defined herein as including at least one of a chymotrypsin, trypsin, collagenase, elastase or exo peptidase activity or asialo GM1 ceramide binding activity. These proteins are useful for multiple purposes, including treating viral infections such as herpes outbreaks, fungal, bacterial or parasitic infections, including the primary and secondary infections of leprosy, colitis, ulcers, hemorrhoids, corneal scarring, dental **plaque**, acne, cystic fibrosis, blood clots, wounds, immune disorders including autoimmune disease and cancer.

L5 ANSWER 2 OF 11 WPIDS (C) 2003 THOMSON DERWENT
ACCESSION NUMBER: 2003-167448 [16] WPIDS
DOC. NO. CPI: C2003-043570
TITLE: Composition, useful for, e.g. decreasing cholesterol, preventing hypertension, inhibiting platelet adhesion or preventing diabetes, comprises **krill** and/or marine oil in association with carrier.
DERWENT CLASS: B04 B05 C03 D13 D21
INVENTOR(S): SAMPALIS, T
PATENT ASSIGNEE(S): (NEPT-N) NEPTUNE TECHNOLOGIES & BIORESOURCES INC
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2002102394	A2	20021227	(200316)*	EN	16

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2002102394	A2	WO 2002-CA843	20020607

PRIORITY APPLN. INFO: US 2001-298383P 20010618
AN 2003-167448 [16] WPIDS
AB WO2002102394 A UPAB: 20030307
NOVELTY - Composition (I), comprises
(A) **krill** and/or marine oil containing eicosapentanoic acid, docosahexanoic acid, phosphatidylcholine, phosphatidylinositol, phosphatidylserine, phosphatidylethanolamine, sphingomyelin, alpha -tocopherol, astaxanthin and flavonoid; and
(B) a carrier.
DETAILED DESCRIPTION - Composition (I), comprises
(A) **krill** and/or marine oil containing eicosapentanoic acid, docosahexanoic acid, phosphatidylcholine, phosphatidylinositol, phosphatidylserine, phosphatidylethanolamine, sphingomyelin, alpha -tocopherol, astaxanthin and flavonoid; and
(B) a carrier.
The **krill** and marine oil is obtained by:
(a) placing **krill** and/or marine material in a ketone extract (preferably acetone) to obtain extraction of the soluble lipid fraction from the marine and/or aquatic animal material;
(b) separating the liquid and solid contents;
(c) recovering a first lipid rich fraction from the liquid contents by evaporation of the solvent in the liquid contents;
(d) placing the solid contents in an organic solvent comprising alcohol (preferably ethanol), isopropanol, t-butanol or ester of acetic acid (preferably ethyl acetate) to obtain extraction of the remaining soluble lipid fraction from the marine and/or aquatic

animal material;

(e) separating the liquid and solid contents;

(f) recovering a second lipid rich fraction by evaporation of the solvent from the liquid contents, and

(g) recovering the solid contents.

ACTIVITY - Antilipemic; Thrombolytic; Anticoagulant; Cardiant; Antiarthritic; Cytostatic; Antidiabetic; Tocolytic; Dermatological; Hypotensive; Osteopathic; Antirheumatic; Analgesic.

In a test, a composition (A) comprising **krill** oil in combination with a carrier was tested for its ability to treat arthritis. A study was performed with patients diagnosed with and treated for osteoarthritis and having treatment with NSAIDs and/or analgesics for at least 3 months before enrollment. A group of 13 patients were administered at a daily rate of 6 capsules of 800 mg of (A). The patients were asked to follow a normal healthy diet. It was observed that 10 out of 13 people reported 76.9% pain relief and improvement of flexibility of large joints (lower back, knees, shoulders) whereas the remaining 3 people showed a pain relief of 23.1%.

MECHANISM OF ACTION - Platelet adhesion inhibitor.

USE - (I) is used for reducing cholesterol, for inhibiting platelet adhesion and **plaque** formation in arteries, for preventing or treating hypertension, arthritis such as rheumatoid arthritis, osteoarthritis, skin cancer and premenstrual syndrome, enhancing transdermal transportation for dermatological topical therapeutic or cosmetic applications, for reducing premenstrual syndrome's symptoms and for controlling blood glucose level, pain, cardiovascular disease, skin wrinkles or diabetes.

ADVANTAGE - The extract exhibits improved blood irrigation, increased epidermis regeneration, accelerates the differentiation of keratin and reduces the activation of **enzymes**.

Dwg.0/0

L5 ANSWER 3 OF 11 MEDLINE DUPLICATE 1

ACCESSION NUMBER: 2001643755 MEDLINE
DOCUMENT NUMBER: 21552168 PubMed ID: 11695752
TITLE: Proteolytic degradation of oral biofilms in vitro and in vivo: potential of proteases originating from Euphausia superba for **plaque** control.
AUTHOR: Berg C H; Kalfas S; Malmsten M; Arnebrant T
CORPORATE SOURCE: YKI, Institute for Surface Chemistry, Stockholm, Sweden.. cecilia.hahnberg@surfchem.kth.se
SOURCE: EUROPEAN JOURNAL OF ORAL SCIENCES, (2001 Oct) 109 (5) 316-24.
Journal code: 9504563. ISSN: 0909-8836.
PUB. COUNTRY: Denmark
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Dental Journals; Priority Journals
ENTRY MONTH: 200202
ENTRY DATE: Entered STN: 20011107
Last Updated on STN: 20020207
Entered Medline: 20020206

AB This paper deals with enzymatic removal of dental **plaque**, in vitro as well as in vivo, using proteases from the Antarctic **krill** shrimp (Euphausia superba), referred to as Krillase. Krillase exhibits both endo- and exopeptidase activity but has no microbicidal effect. In model systems with pure cultures of oral

microorganisms. Krillase demonstrated inhibition of microbial adhesion to saliva-coated hydroxyapatite. Furthermore, a protocol for the growth of reproducible in vitro **plaque** films has been developed, and effects of Krillase on the **plaque** film were investigated by means of scanning electron microscopy (SEM). The results showed that Krillase efficiently released microorganisms from **plaque** in vitro, the effect being dependent on the enzymatic activity. The surface energy of the substratum had a minor influence on the formation and removal of **plaque** in vitro. Ellipsometric studies on the formation and enzymatic removal of a salivary pellicle indicated that the enzymatic effect on **plaque** may partly depend on degradation of the salivary pellicle. Krillase was also able to remove **plaque** accumulated on dentures in vivo. Our results demonstrate the potential of Krillase for **plaque** control, and that these **enzymes** are worthy of further investigations including clinical studies and work to find a suitable vehicle.

L5 ANSWER 4 OF 11 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2000:394407 BIOSIS
DOCUMENT NUMBER: PREV200000394407
TITLE: Antimicrobial uses of multifunctional **enzyme**
.
AUTHOR(S): de Faire, Johan R. (1); Franklin, Richard L.; Kay, John; Lindblom, Ragnvald
CORPORATE SOURCE: (1) Vattholma Sweden
ASSIGNEE: Phairson Medical Inc., London, UK
PATENT INFORMATION: US 6030612 February 29, 2000
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Feb. 29, 2000) Vol. 1231, No. 5, pp. No pagination. e-file.
ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
AB The invention relates to a multifunctional **enzyme** that can be derived from **crustaceans** or fish. The **enzyme** has at least one of a chymotrypsin, trypsin, elastase, collagenase and exo peptidase activity, and a molecular weight between about 20 kd and about 40 kd. Preferably, the multifunctional **enzyme** has substantial anti cell-cell adhesion activity. Preferably, the multifunctional **enzyme** has substantial homology with the **krill** multifunctional **enzyme**. These **enzymes** are useful for treating viral infections such as herpes outbreaks, fungal, bacterial or parasitic infections, including the primary and secondary infections of leprosy, colitis, ulcers, hemorrhoids, corneal scarring, dental **plaque**, acne, cystic fibrosis, blood clots, wounds, immune disorders including autoimmune disease and cancer. Additionally, the invention relates to a method of purifying the multifunctional **enzyme** , and to a preparation of essentially purified multifunctional **enzyme**.

L5 ANSWER 5 OF 11 WPIDS (C) 2003 THOMSON DERWENT
ACCESSION NUMBER: 1999-561004 [47] WPIDS
CROSS REFERENCE: 1996-384219 [38]; 2001-450051 [35]
DOC. NO. CPI: C1999-163410
TITLE: Treating acne and eczema using a **krill** -derived multifunctional **enzyme**.

DERWENT CLASS: B04 D16
INVENTOR(S): DE FAIRE, J R; FRANKLIN, R L; KAY, J; LINDBLOM, R
PATENT ASSIGNEE(S): (PHAI-N) PHAIRSON MEDICAL INC
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 5958406	A	19990928	(199947)*		42

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
US 5958406	A	CIP of	US 1994-388501	19941122
		CIP of	US 1995-385540	19950208
		CIP of	US 1995-486820	19950607
			US 1996-600273	19960208

PRIORITY APPLN. INFO: US 1996-600273 19960208; US 1994-388501 19941122; US 1995-385540 19950208; US 1995-486820 19950607

AN 1999-561004 [47] WPIDS
CR 1996-384219 [38]; 2001-450051 [35]
AB US 5958406 A UPAB: 20010829
NOVELTY - A method (X) for treating acne and eczema using a **krill**-derived multifunctional **enzyme** (I), is new.
(I) comprises 2 or more of the activities of chymotrypsin, trypsin, collagenase, elastase or exopeptidase and is reactive with cell surface receptors such as proteins or glycoproteins.

DETAILED DESCRIPTION - A method (X) of treating acne or eczema comprising administering a **krill**-derived multifunctional **enzyme** (I). (I) comprises 2 or more of the activities of chymotrypsin, trypsin, collagenase, elastase or exopeptidase and a molecular weight of 26 to 32 KiloDaltons (determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE)). (I) comprises the N-terminal amino acid sequence:

I-V-G-G-X-E-V-T-P-H-A-Y-P-W-Q-V-G-L-F-I-D-D-M-Y-F

X = any amino acid

ACTIVITY - Antiseborrheic; anti-acne; dermatological; anti-eczema.

40 patients with eczematous seborrheic infections were treated once or twice a day with the multifunctional **enzyme**. Patients with dry eczema/eczema **plaques** showed no signs of inflammation after 2 - 4 treatments. The fatty type of seborrheic **plaques** disappeared after 6 - 9 days (however the associated inflammation/infections had disappeared within the initial 2 - 4 days of treatment).

MECHANISM OF ACTION - (I) removes or inactivates cell surface receptors (proteins and glycoproteins) and adhesion molecules such as ICAM-1 (i.e. CD54) (preferred), ICAM-2, VCAM-1, CD4 (preferred), CD8 (preferred), CD28, CD29D, CD31, CD44, CD49, CD62L (preferred), CD102 and the asialo GM1 ceramide.

USE - (X) is used to treat acne and eczema.

Dwg.0/13

L5 ANSWER 6 OF 11 MEDLINE DUPLICATE 2

ACCESSION NUMBER: 1999328655 MEDLINE
DOCUMENT NUMBER: 99328655 PubMed ID: 10402205
TITLE: Molecular cloning and characterization of prophenoloxidase in the black tiger shrimp, Penaeus monodon.
AUTHOR: Sritunyalucksana K; Cerenius L; Soderhall K
CORPORATE SOURCE: Department of Physiological Mycology, Evolutionary Biology Centre, University of Uppsala, Sweden.
SOURCE: DEVELOPMENTAL AND COMPARATIVE IMMUNOLOGY, (1999 Apr) 23 (3) 179-86.
Journal code: 7708205. ISSN: 0145-305X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF099741
ENTRY MONTH: 199908
ENTRY DATE: Entered STN: 19990910
Last Updated on STN: 20021218
Entered Medline: 19990826

AB A cDNA encoding shrimp, Penaeus monodon, prophenoloxidase (proPO) was obtained by screening a hemocyte library by **plaque** hybridization using a proPO cDNA fragment from freshwater crayfish, Pacifastaceus leniusculus, as a probe. The 3,002 bp cDNA contains an open reading frame of 2,121 bp and a 881 bp 3'-untranslated region. The molecular mass of the deduced amino acid sequence (688 amino acids) is 78,700 Da with an estimated pI of 5.8. Two putative copper binding sites are present and they have a highly conserved sequence around these sites. No signal peptide was detected in the shrimp proPO, as has been previously shown to be the case for all arthropod proPOs cloned so far. The cleavage site of zymogen activation is likely to be between Arg 44 and Val 45. A tentative complement-like motif (GCGWPQHM) is also present. Shrimp proPO mRNA is synthesized in the hemocytes and not in the hepatopancreas. Comparison of amino acid sequences showed that shrimp proPO is more closely related to another **crustacean** proPO, namely crayfish, than to the insect proPOs.

L5 ANSWER 7 OF 11 WPIDS (C) 2003 THOMSON DERWENT
ACCESSION NUMBER: 1996-384219 [38] WPIDS
CROSS REFERENCE: 1999-561004 [47]; 2001-450051 [35]
DOC. NO. CPI: C1996-120895
TITLE: Multifunctional **enzyme** homologous to **krill** multifunctional **hydrolase** - inactivates many cell surface adhesion mols., useful for treatment and prevention of infections, skin disorders, cancer and inflammation.
DERWENT CLASS: B04 C06 D16 D21 P81
INVENTOR(S): DEFAIRE, J; FRANKLIN, R L; KAY, J; DE FAIRE, J; DE FAIRE, J R; LINDBLOM, R
PATENT ASSIGNEE(S): (PHAI-N) PHAIRSON MEDICAL INC
COUNTRY COUNT: 66
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9624371	A1	19960815	(199638)*	EN	128

RW: AT BE CH DE DK EA ES FR GB GR IE IT KE LS LU MC MW NL OA PT

SD SE SZ UG
W: AL AM AU BB BG BR CA CN CZ EE FI GE HU IS JP KG KP KR LK LR
LT LV MD MG MK MN MX NO NZ PL RO SG SI SK TR TT UA UZ VN

AU	9649170	A	19960827	(199649)	
ZA	9601030	A	19961129	(199702)	44
NO	9703627	A	19971007	(199751)	
EP	810875	A1	19971210	(199803)	EN

R: AL AT BE CH DE DK ES FR GB GR IE IT LI LT LU LV MC NL PT SE
SI

BR	9607506	A	19971223	(199806)	
CZ	9702541	A3	19980318	(199817)	
JP	11502102	W	19990223	(199918)	107
KR	98702081	A	19980715	(199927)	
HU	9900338	A2	19990628	(199931)	
US	5945102	A	19990831	(199942)	
MX	9706095	A1	19980601	(200009)	
US	6030612	A	20000229	(200018)	
AU	718220	B	20000413	(200028)	
NZ	302984	A	20010126	(200109)	
NZ	503162	A	20011130	(200207)	
CN	1181018	A	19980506	(200236)	

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
WO 9624371	A1		WO 1996-US1650	19960208
AU 9649170	A		AU 1996-49170	19960208
ZA 9601030	A		ZA 1996-1030	19960208
NO 9703627	A		WO 1996-US1650	19960208
			NO 1997-3627	19970806
EP 810875	A1		EP 1996-905398	19960208
			WO 1996-US1650	19960208
BR 9607506	A		BR 1996-7506	19960208
			WO 1996-US1650	19960208
CZ 9702541	A3		WO 1996-US1650	19960208
			CZ 1997-2541	19960208
JP 11502102	W		JP 1996-524401	19960208
			WO 1996-US1650	19960208
KR 98702081	A		WO 1996-US1650	19960208
			KR 1997-705476	19970808
HU 9900338	A2		WO 1996-US1650	19960208
			HU 1999-338	19960208
US 5945102	A	CIP of	US 1994-338501	19941122
			US 1995-385540	19950208
MX 9706095	A1		MX 1997-6095	19970808
US 6030612	A	CIP of	WO 1993-SE455	19930521
		CIP of	US 1994-338501	19941122
		CIP of	US 1995-385540	19950208
			US 1995-486820	19950607
AU 718220	B		AU 1996-49170	19960208
NZ 302984	A		NZ 1996-302984	19960208
			WO 1996-US1650	19960208
NZ 503162	A		NZ 1996-503162	19960208
CN 1181018	A		CN 1996-193103	19960208

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9649170	A	Based on	WO 9624371
EP 810875	A1	Based on	WO 9624371
BR 9607506	A	Based on	WO 9624371
CZ 9702541	A3	Based on	WO 9624371
JP 11502102	W	Based on	WO 9624371
KR 98702081	A	Based on	WO 9624371
HU 9900338	A2	Based on	WO 9624371
AU 718220	B	Previous Publ.	AU 9649170
		Based on	WO 9624371
NZ 302984	A	Div in	NZ 503162
		Based on	WO 9624371
NZ 503162	A	Div ex	NZ 302984

PRIORITY APPLN. INFO: US 1995-486820 19950607; US 1995-385540 19950208; US 1994-338501 19941122; WO 1993-SE455 19930521

AN 1996-384219 [38] WPIDS

CR 1999-561004 [47]; 2001-450051 [35]

AB WO 9624371 A UPAB: 20020610

Multifunctional **enzyme** (I), having a purity with respect to macromolecule content of about 95 %, a mol.wt. of about 20-40 kD by SDS-PAGE and substantial homology to **krill** derived multifunctional **hydrolase**, has chymotrypsin, trypsin, collagenase, elastase and/or exopeptidase activity. Also new is a contraceptive device contg. sufficient (I), or a less pure **enzyme**, for the prevention of microbial infection.

USE - (I), and/or a less pure **enzyme**, are used to treat or prevent viral (e.g. HIV, HSV, HPV, etc.), bacterial or local/systemic fungal infections, skin disorders, e.g. acne, psoriasis, eczema and (post-partum) haemarrhoids, cancer (including metastases), septic shock, tissue adhesions, malaria, immune disorders (esp. autoimmune diseases) and apoptosis (esp. glaucoma and cataracts), cystic fibrosis, COPD, atherosclerosis, asthma, reperfusion injury, colitis, enteritis and malaria-associated pain. (I) may also be used to remove dead or peeling skin (i.e. in cosmetics), lyse blood clots, improve wound healing, remove dental **plaque**, clean contact lenses (esp. in situ), prevent, diminish or remove corneal scars and treat of conjunctivitis and treat (in vivo or ex vivo) tissue (esp. for transplant), body fluids or cell compsns. to eliminate/inactivate cell adhesion mols., partic. to inhibit immune rejection.

ADVANTAGE - (I) eliminates some cell-surface adhesion molecules (ICAM-1 and 2, VCAM-1, CD4, 8, 28, 37 and 44 and asialo-GM1 ceramide), without affecting cell viability, but other surface receptors, e.g. T-cell receptor, MHC Class I and CD11/CD18 integrin, are not altered.

Dwg.12/12

L5 ANSWER 8 OF 11 WPIDS (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: 1996-039956 [04] WPIDS

DOC. NO. CPI: C1996-013407

TITLE: Use of **krill enzyme** for mfr. of compsn. to prevent dental **plaque** - also prevents yeast cell infections and soft-tissue inflammation.

DERWENT CLASS: B04 D16 D21

INVENTOR(S): HELLGREN, K; HELLGREN, L; MOHR, V; VINCENT, J; HELLGREN, L G I

PATENT ASSIGNEE(S): (MDSE-N) MD SERV EURO SA; (HELL-I) HELLGREN K; (HELL-I) HELLGREN L G I; (MOHR-I) MOHR V; (VINC-I) VINCENT J; (HELL-I) HELLGREN L

COUNTRY COUNT: 52

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9533470	A1	19951214	(199604)*	EN	16
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE					
W: AT AU BB BG BR BY CA CH CN CZ DE DK ES FI GB GE HU JP KG KP KR KZ LK LU LV MD MG MN MW NL NO NZ PL PT RO RU SD SE SK TJ TT UA US UZ VN					
AU 9472779	A	19960104	(199613)		
EP 759764	A1	19970305	(199714)	EN	
R: DE FR GB IT SE					
JP 10500991	W	19980127	(199814)		14
AU 700252	B	19981224	(199912)#		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9533470	A1	WO 1994-SE549	19940607
AU 9472779	A	AU 1994-72779	19940607
		WO 1994-SE549	19940607
EP 759764	A1	EP 1994-923112	19940607
		WO 1994-SE549	19940607
JP 10500991	W	WO 1994-SE549	19940607
		JP 1996-500723	19940607
AU 700252	B	AU 1994-72779	19940607

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9472779	A	Based on	WO 9533470
EP 759764	A1	Based on	WO 9533470
JP 10500991	W	Based on	WO 9533470
AU 700252	B	Previous Publ.	AU 9472779
		Based on	WO 9533470

PRIORITY APPLN. INFO: WO 1994-SE549 19940607

AN 1996-039956 [04] WPIDS

AB WO 9533470 A UPAB: 19960129

Use of **krill enzyme** (I) for the mfr. of a prophylactic compsn. for preventing dental **plaque** formation in a human subject is new.

USE - (I) can be used in a prophylactic compsn., admin. to the oral cavity, for preventing dental **plaque** formation and decreasing the adhesive ability of **plaque** bacteria in a subject (claimed). (I) can also be used to prevent yeast-cell infections and soft-tissue inflammation and should be administered at 1-3 g, twice daily.

Dwg.0/0

L5 ANSWER 9 OF 11 WPIDS (C) 2003 THOMSON DERWENT
ACCESSION NUMBER: 1993-405423 [50] WPIDS
DOC. NO. CPI: C1993-180113
TITLE: **Enzyme** compsn. from Antarctic **krill** - used for treating e.g. infections, inflammations, cancers, HIV-AIDS, pain, skin conditions or eye diseases.
DERWENT CLASS: B04 C03 D16 D21
INVENTOR(S): DE FAIRE, J; LINDBLOM, R; LINDBLOOM, R; DA FAIRE, J; DE FIARE, J
PATENT ASSIGNEE(S): (PHAI-N) PHAIRSON MEDICAL AB; (PHAI-N) PHAIRSON MEDICAL INC
COUNTRY COUNT: 46
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9324142	A1	19931209	(199350)*	EN	76
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE					
W: AT AU BB BG BR CA CH CZ DE DK ES FI GB HU JP KP KR KZ LK LU MG MN MW NL NO NZ PL PT RO RU SD SE SK UA US VN					
AU 9341000	A	19931230	(199415)		
ZA 9303598	A	19940330	(199417)		77
NO 9404448	A	19950123	(199513)		
EP 642351	A1	19950315	(199515)	EN	
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
CN 1089505	A	19940720	(199534)		
CZ 9402867	A3	19950816	(199542)		
HU 69989	T	19950928	(199546)		
JP 08501068	W	19960206	(199643)		89
SK 9401405	A3	19961002	(199649)		
AU 675942	B	19970227	(199717)		
EP 824910	A2	19980225	(199812)	EN	50
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
EP 838213	A1	19980429	(199821)	EN	51
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
CA 2306952	A1	19931209	(200044)	EN	
JP 2000351734	A	20001219	(200104)		29
EP 642351	B1	20020320	(200221)	EN	
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
KR 290266	B	20010515	(200223)		
DE 69331739	E	20020425	(200235)		
ES 2173887	T3	20021101	(200279)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9324142	A1	WO 1993-SE455	19930521
AU 9341000	A	AU 1993-41000	19930521
ZA 9303598	A	ZA 1993-3598	19930524
NO 9404448	A	WO 1993-SE455	19930521
		NO 1994-4448	19941121
EP 642351	A1	EP 1993-910549	19930521
		WO 1993-SE455	19930521
CN 1089505	A	CN 1993-108207	19930522
CZ 9402867	A3	CZ 1994-2867	19930521
HU 69989	T	WO 1993-SE455	19930521

			HU 1994-3343	19930521
JP 08501068	W		WO 1993-SE455	19930521
			JP 1994-500454	19930521
SK 9401405	A3		WO 1993-SE455	19930521
			SK 1994-1405	19930521
AU 675942	B		AU 1993-41000	19930521
EP 824910	A2	Div ex	EP 1993-910549	19930521
			EP 1997-202849	19930521
EP 838213	A1	Div ex	EP 1993-910549	19930521
			EP 1997-202796	19930521
CA 2306952	A1	Div ex	CA 1993-2136331	19930521
			CA 1993-2306952	19930521
JP 2000351734	A	Div ex	JP 1994-500454	19930521
			JP 2000-147259	19930521
EP 642351	B1		EP 1993-910549	19930521
			WO 1993-SE455	19930521
		Related to	EP 1997-202796	19930521
		Related to	EP 1997-202849	19930521
KR 290266	B		WO 1993-SE455	19930521
			KR 1994-704201	19941122
DE 69331739	E		DE 1993-631739	19930521
			EP 1993-910549	19930521
			WO 1993-SE455	19930521
ES 2173887	T3		EP 1993-910549	19930521

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9341000	A	Based on	WO 9324142
EP 642351	A1	Based on	WO 9324142
HU 69989	T	Based on	WO 9324142
JP 08501068	W	Based on	WO 9324142
AU 675942	B	Previous Publ.	AU 9341000
		Based on	WO 9324142
EP 824910	A2	Div ex	EP 642351
EP 838213	A1	Div ex	EP 642351
EP 642351	B1	Related to	EP 824910
		Related to	EP 838213
		Based on	WO 9324142
KR 290266	B	Previous Publ.	KR 95701529
		Based on	WO 9324142
DE 69331739	E	Based on	EP 642351
		Based on	WO 9324142
ES 2173887	T3	Based on	EP 642351

PRIORITY APPLN. INFO: SE 1992-1628 19920522
AN 1993-405423 [50] WPIDS
AB WO 9324142 A UPAB: 19940203
Use is claimed of a non-immunogenic **enzyme** compsn. which has been isolated from Antarctic **krill** and exhibits both endo- and exo peptidase activity for the mfr. of a medicament for the treatment of (i) infections, e.g. viral, bacterial, fungus and mycoplasmatic infections, (ii) inflammations, e.g. gingivitis, arthritis, mastitis, sinusitis, bronchitis, prostatitis and gastric ulcer, (iii) cancers, (iv) HIV/AIDS, (v) pain, (vi) polyps, warts, haemorrhoids, **plaque**, wrinkles, thin hair, allergic itch, anti-adhesion, or (vii) eye diseases such as cataract, glaucoma etc.

USE/ADVANTAGE - The **enzyme** prepn. has endo- and exo-peptidase activity and also antimicrobial activity and can be used to treat a wide variety of conditions.
Dwg.0/32

L5 ANSWER 10 OF 11 MEDLINE DUPLICATE 3
ACCESSION NUMBER: 93055221 MEDLINE
DOCUMENT NUMBER: 93055221 PubMed ID: 1430062
TITLE: A streptavidin-biotin-enhanced nitrocellulose **enzyme** immunoassay for the detection of rhabdovirus of penaeid shrimps from infected animals.
AUTHOR: Nadala E C Jr; Lu Y; Loh P C; Brock J A
CORPORATE SOURCE: Department of Microbiology, University of Hawaii, Honolulu.
SOURCE: JOURNAL OF VIROLOGICAL METHODS, (1992 Sep) 39 (1-2) 227-9.
Journal code: 8005839. ISSN: 0166-0934.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199212
ENTRY DATE: Entered STN: 19930122
Last Updated on STN: 19980206
Entered Medline: 19921203

AB A streptavidin-biotin-enhanced nitrocellulose **enzyme** immunoassay was developed for the detection of the rhabdovirus of penaeid shrimps (RPS) in the tissues of infected animals. Initial tests indicate that the assay was capable of detecting as few as ten **plaque**-forming units of virus.

L5 ANSWER 11 OF 11 JAPIO COPYRIGHT 2003 JPO
ACCESSION NUMBER: 2000-351734 JAPIO
TITLE: NEW PHARMACEUTICAL USE OF **KRILL ENZYME**
INVENTOR: LINDBLOM RAGNVALD; DE FAIRE JOHAN
PATENT ASSIGNEE(S): PHAIRSON MEDICAL AB
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2000351734	A	20001219	Heisei	A61K038-54

APPLICATION INFORMATION
STN FORMAT: JP 1993-147259 19930521
ORIGINAL: JP2000147259 Heisei
PRIORITY APPLN. INFO.: SE 1992-1628 19920522
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000

AN 2000-351734 JAPIO
AB PROBLEM TO BE SOLVED: To obtain a medicine harmonizing with immune system, symbiotically interacting, attacking pathogeny and symptom, free from side effect, useful for therapy of **plaque** on a tooth by including a proteolytic **enzyme** separated from **krill**.
SOLUTION: This medicine includes a mixture of hydrase including an **enzyme** originating from **krill**. In a preferable example of a preparative method of this medicine, distilled water is

added to white **krill** or Euphausia superba in a ratio of 1:1, adding 0.02% of sodium azide and leaving standing for 6 hr. at 4°C. Then recovering aqueous phase by centrifugal separation and degreasing by adding ethyl acetate at 4°C. Recovering lower side aqueous phase, boiling and adding saturated ammonium sulfate to saturated sate of 60%. Separating the product precipitate, dissolving in 0.05 mole phosphorus buffer solutiorl of 0.05 mole sodium chloride (PBS) at pH 7.4 and then extracting the material by dialyzing to PBS. Multiple **enzymes** and a single **enzyme** are recovered from the extracted material.
COPYRIGHT: (C)2000,JPO

(FILE 'MEDLINE' ENTERED AT 15:08:39 ON 15 MAY 2003)
L6 4567 SEA FILE=MEDLINE ABB=ON PLU=ON CRUSTACEA/CT
L7 11216 SEA FILE=MEDLINE ABB=ON PLU=ON "DENTAL PLAQUE"/CT
L8 1 SEA FILE=MEDLINE ABB=ON PLU=ON L6 AND L7

L8 ANSWER 1 OF 1 MEDLINE
AN 2001643755 MEDLINE
TI Proteolytic degradation of oral biofilms in vitro and in vivo: potential of proteases originating from Euphausia superba for plaque control.
AU Berg C H; Kalfas S; Malmsten M; Arnebrant T
SO EUROPEAN JOURNAL OF ORAL SCIENCES, (2001 Oct) 109 (5) 316-24. Journal code: 9504563. ISSN: 0909-8836.
AB This paper deals with enzymatic removal of dental plaque, in vitro as well as in vivo, using proteases from the Antarctic krill shrimp (Euphausia superba), referred to as Krillase. Krillase exhibits both endo- and exopeptidase activity but has no microbicidal effect. In model systems with pure cultures of oral microorganisms. Krillase demonstrated inhibition of microbial adhesion to saliva-coated hydroxyapatite. Furthermore, a protocol for the growth of reproducible in vitro plaque films has been developed, and effects of Krillase on the plaque film were investigated by means of scanning electron microscopy (SEM). The results showed that Krillase efficiently released microorganisms from plaque in vitro, the effect being dependent on the enzymatic activity. The surface energy of the substratum had a minor influence on the formation and removal of plaque in vitro. Ellipsometric studies on the formation and enzymatic removal of a salivary pellicle indicated that the enzymatic effect on plaque may partly depend on degradation of the salivary pellicle. Krillase was also able to remove plaque accumulated on dentures in vivo. Our results demonstrate the potential of Krillase for plaque control, and that these enzymes are worthy of further investigations including clinical studies and work to find a suitable vehicle.

=> fil hom
FILE 'HOME' ENTERED AT 15:09:43 ON 15 MAY 2003

FILE 'REGISTRY' ENTERED AT 15:15:30 ON 16 MAY 2003
L1 473 S HYDROLASE ?/CN

FILE 'HCAPLUS' ENTERED AT 15:15:45 ON 16 MAY 2003
L2 2250 S (L1 OR HYDROLASE OR ENZYME) AND PLAQUE
L3 8 S L2 AND (KRILL OR CRUSTACEA?)
L4 3 S L2 AND SHRIMP
L5 1 S L4 NOT L3

L5 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1992:648031 HCAPLUS
DOCUMENT NUMBER: 117:248031
TITLE: A streptavidin-biotin-enhanced nitrocellulose **enzyme** immunoassay for the detection of rhabdovirus of penaeid **shrimps** from infected animals
AUTHOR(S): Nadala, Elpidio Cesar B.; Lu, Yuanan; Loh, Philip C.; Brock, James A.
CORPORATE SOURCE: Dep. Microbiol., Univ. Hawaii, Honolulu, HI, USA
SOURCE: Journal of Virological Methods (1992), 39(1-2), 227-9
CODEN: JVMEDH; ISSN: 0166-0934
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A streptavidin-biotin-enhanced nitrocellulose **enzyme** immunoassay was developed for the detection of rhabdovirus of penaeid **shrimps** in tissues of infected animals. Initial tests indicate that the assay was capable of detecting as few as 10 **plaque**-forming units of virus.

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO' ENTERED AT 15:17:05 ON 16 MAY 2003)
L6 15 S L3
L7 10 S L4
L8 3 S L7 NOT L6
L9 2 DUP REM L8 (1 DUPLICATE REMOVED)

L9 ANSWER 1 OF 2 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.DUPLICATE 1
ACCESSION NUMBER: 92280824 EMBASE
DOCUMENT NUMBER: 1992280824
TITLE: A streptavidin-biotin-enhanced nitrocellulose **enzyme** immunoassay for the detection of rhabdovirus of penaeid **shrimps** from infected animals.
AUTHOR: Nadala Jr. E.C.B.; Lu Y.; Loh P.C.; Brock J.A.
CORPORATE SOURCE: Department of Microbiology, University of Hawaii,Honolulu, HI, United States
SOURCE: Journal of Virological Methods, (1992) 39/1-2 (227-229).
ISSN: 0166-0934 CODEN: JVMEDH
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
026 Immunology, Serology and Transplantation
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB A streptavidin-biotin-enhanced nitrocellulose **enzyme** immunoassay was developed for the detection of the rhabdovirus of penaeid **shrimps** (RPS) in the tissues of infected animals. Initial tests indicate that the assay was capable of detecting as few as ten **plaque**-forming units of virus.

L9 ANSWER 2 OF 2 MEDLINE
ACCESSION NUMBER: 82257447 MEDLINE
DOCUMENT NUMBER: 82257447 PubMed ID: 6285976
TITLE: Molecular cloning and characterization of ribosomal RNA genes from the brine **shrimp**.
AUTHOR: Vaughn J C; Whitman D J; Bagshaw J C; Helder J C
CONTRACT NUMBER: GM 21376 (NIGMS)
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA, (1982 May 31) 697 (2) 156-61.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
LE SEGMENT: Priority Journals
ENTRY MONTH: 198210
ENTRY DATE: Entered STN: 19900317
Last Updated on STN: 19970203
Entered Medline: 19821021

AB A library of genomic DNA from the brine **shrimp**, Artemia, has been constructed with the Charon 4A phage vector, utilizing EcoRI passenger fragments. Screening this library with purified Xenopus laevis cloned rDNA genes has resulted in the identification and **plaque** purification of a recombinant containing a complete Artemia (18 S + 26 S) rDNA repeat unit. A physical map derived from the analysis of restriction endonuclease digests of the repeat unit, which measures 13.9 kilobase pairs, is similar to the map derived from genomic DNA. In common with several other species, the 26 S rRNA gene terminates with a HindIII recognition site.

FILE 'HCAPLUS' ENTERED AT 15:19:56 ON 16 MAY 2003
L10 2 S L2 AND ((EUPHAUS? OR E)(W)SUPERBA)
L11 0 S L10 NOT (L3 OR L5)

FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO' ENTERED AT 15:20:52 ON 16 MAY 2003
L12 4 S L10
L13 0 S L12 NOT (L6 OR L8)

FILE 'REGISTRY' ENTERED AT 15:21:35 ON 16 MAY 2003
E KRILLASE/CN 5
L14 1 S E3

FILE 'HCAPLUS' ENTERED AT 15:21:48 ON 16 MAY 2003
L15 2 S (L14 OR KRILLASE) AND PLAQUE
L16 1 S L15 NOT (L3 OR L5)

L16 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:638277 HCAPLUS
TITLE: Ellipsometry, TIRF, and microscopy studies of proteolytic degradation of interfacial proteinaceous layers
AUTHOR(S): Malmsten, Martin; Arnebrant, Thomas; Hahn,

Cecilia; Muller, Dries
CORPORATE SOURCE: YKI, Institute for Surface Chemistry, SE-114 86 Stockholm, N/A, Swed.
SOURCE: Abstracts of Papers, 222nd ACS National Meeting, Chicago, IL, United States, August 26-30, 2001 (2001), COLL-241. American Chemical Society: Washington, D. C.
CODEN: 69BUZP
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB Ellipsometry, total internal reflectance fluorescence spectroscopy (TIRF) and microscopy were employed to investigate the effects of proteolytic enzymes, notably **krillase** and trypsin, on interfacial proteinaceous layers. For gelatin adsorbed at silica/glass and methylated silica/glass, the results show that homogeneous and heterogeneous exchange occurs readily for the latter substrates, as does autolysis of trypsin, while the effect of exchange is limited at the latter. The exposure of pre-adsorbed gelatin to inactivated **krillase** showed a nearly complete elimination in the effects obsd. on addn. of intact **krillase** , which indicates that the enzymic activity of **krillase** in its native form plays a major role for the interaction between **krillase** and pre-adsorbed gelatin. Krilllase was also investigated in relation to degrdn. of interfacial salivary protein films, as well as its ability to remove interfacial bacterial **plaque** and prevent its formation. Comparison is made between results obtained in vitro with ellipsometry, microscopy, and a radioactive assay, on one hand, and in vivo results, on the other.

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO' ENTERED AT 15:22:29 ON 16 MAY 2003)
L17 3 S L15
L18 0 S L17 NOT (L6 OR L8)

FILE 'HOME' ENTERED AT 15:23:13 ON 16 MAY 2003